Revolutionizing Student Accommodation: A MERN-Based Rental System for Seamless Property Management

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Abstract

This web application facilitates the registration of individual homes or apartments to streamline the process of finding ideal rental properties. Users can conveniently search for their next rental in targeted areas through a user-friendly interface. The platform is designed to cater to diverse real estate needs in India, including property buying, selling, and leasing. It serves as a valuable tool for investment by maintaining a comprehensive database of various properties and agent information. Not only does it assist users in accessing updated property information globally, but it also enables agents to manage and update their listings. The platform alleviates the complexities associated with traditional property search methods by offering a simplified online form, minimizing the need for individual agent communication, appointment scheduling, and time coordination.

Keywords: Recommendation System

1. INTRODUCTION

We are stuck with technology when what we really want is just stuff that works [1]. With the current paradigm shift in the technological field, there is an urgent need to embrace and appreciate the power of technology [2]. The housing sector remains vigilant to face the challenges of change by employing a new strategy that facilitates easy management of rental houses [3].

Hence there is a need to develop a house rental project but only for students. The home rental system is searching based on the apartment house for rent in metropolitan cities [4]. The home rental system is based on the owners and the students who are new to this city [5, 6]. The owner is updated on the apartment details, and rent details. The student is detailed about the room space, room rent and the address details also [5, 6].

The home rental system is best suitable for the owners because time is saved and the only contact is with eligible people; there is no need to explain room details verbally [7]. The home rental system is the best application in the city for students to contact and easily search for a suitable place based on their budget and location, saving them time as well [7]. The rental management system is used to easily identify the suitable place, saving time and cost [5, 6]. This application will also help students who are new to the city explore it [7]. We will also add a page where graduating students can share the details of their apartments/hostels so that the new batch of students can easily find a place to stay near their college. We

would also help the student find their ideal roommate. Hence, this system is best applicable for the above reasons, making house rental an easy process through an online system.

For making this system, we will be using MERN stack technologies. The MERN acronym refers to a set of technologies essential for our project: MongoDB, ExpressJS, ReactJS, and NodeJS [4]. MongoDB serves as the repository for data management [4]. ExpressJS aids in constructing backend applications [4]. ReactJS enables the creation of dynamic, interactive user interfaces [4]. And NodeJS facilitates smooth communication between frontend and backend components [4].

These technologies synergize to deliver a high-performance application with diverse, sophisticated functionalities. The MERN stack, known for its effectiveness and user-friendliness, leverages the popularity and robustness of JavaScript [4]. Moreover, it enables coding for both frontend and backend components, making it a comprehensive solution for web application development [4].

2. OBJECTIVE

The main aim of this project is to help students who are new to the city find a home that is near to their college. We would also create a page where in the students who are about to pass out can share their details of the apartment/hostel so that new students can stay there for their duration of college or more.

The project's objectives include:

a) The basic objective of the project is to provide a single platform for students to rent a house or find a hostel.

b) Saving students time and energy by going on to different platform and searching.

c) Students can help their fellow students by providing with the details of their stay during their college time.

d) Providing a booking platform to book a date for the students to visit the location and see if the environment is suitable.

e) Providing user with all the necessary details like the nearest railway station, nearest bus station, nearest grocery store and so on.

f) Finally, incentivizing students with credits to encourage their participation in sharing properties..

3. PROBLEM STATEMENT

In today's world, a considerable number of students opt to pursue higher education in cities distant from their hometowns. However, securing suitable accommodation in proximity to their colleges can pose significant challenges, especially when the institution doesn't offer hostel facilities.

Many colleges do not provide hostel facilities for their students, necessitating students and their families to seek appropriate accommodation elsewhere. Locating suitable apartments or hostels near the college presents hurdles, primar`ily because the majority of available housing options cater to families rather than individual students. Consequently, students are compelled to navigate through various listings to find accommodation that meets their proximity requirements to the college.

This process often proves arduous for both students and their parents alike. Furthermore, besides proximity, the affordability of the accommodation adds another layer of complexity. Balancing the location, affordability, and suitability of the accommodation within their budget becomes a critical consideration for students when searching for suitable living arrangements.

4. LITERATURE SURVEY

This involves studying the existing systems and learning their weakness hence developing a new system to cater to the challenges the local and world domains face when dealing with house rental issues.

Currently, there's a lack of dedicated online platforms catering to the specific housing needs of college students. While numerous house rental websites exist, they primarily list accommodations suitable for families or employed individuals, leaving limited options for students.

Moreover, many hostels catering to students may not be visible on these platforms, often reserved for specific communities. A significant challenge in finding suitable housing lies in the uncertainty surrounding landlords' attitudes towards college students. Some landlords may prefer tenants other than students, while others may not treat students with the respect they deserve.

This uncertainty about landlords' intentions adds another layer of difficulty for students seeking accommodation, as they are unsure whether the landlord genuinely welcomes students or simply has no other choice but to rent out the property.

For students, finding a compatible roommate can be a challenging task. It involves seeking individuals who share similar mindsets, habits, and interests, which isn't always easy. While we might hope to gauge compatibility after just one meeting, it often requires more time and effort to truly get to know a potential roommate.

5. PROPOSED SYSTEM

The proposed system is a user-friendly website designed to cater to the diverse needs of students from different cities that are looking for apartments/hostels. This platform leverages a suite of web development tools, including React, Node.js, MongoDB and Express.js, to create a seamless and engaging user experience. The primary objectives and functionalities of this system are as follows:

1. **User-Friendly Interface**: The user interface will be intuitive and user-friendly, making it easy for user to find the perfect house they look for. The use of modern web development tools will enhance the overall user experience.

2. **Apartments/Hostels:** The website will offer an extensive selection of apartments and hostels in the desired location for the students. It will also give out all the necessary data related to that apartment/hostel.

3. **User Registration:** Users will have the option to sign up and create personalized profiles. This registration process will help us authenticate the user so that we do not have any unwanted users.

4. **Filtering Options:** The platform will allow users to have different types of filtering option like apartments based on location, size, price and even community wise.

5. **Student Interaction Platform:** Pass out students will be able to display their living details were in the new students would be able to use it and find their new home.

6. **Student Based:** The users will be students who are from a different cities looking for apartments.

7. **Favorite Apartment**: The platform facilitates users in selecting several preferred apartments that align with their preferences and offer convenient accessibility.

8. **Credits**: The system offers students and property owners credits as compensation for listing apartments on the platform. These credits are redeemable within the site for a range of activities.

6. EXPERIMENTS & RESULTS
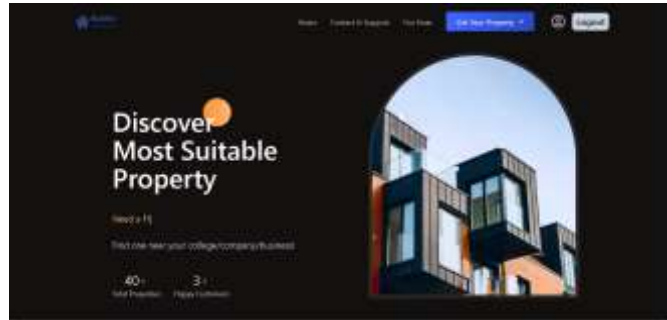
Figure 1 is the landing page of the websites.

Figure 1

Figure 2 is the login and registration page of the website

Figure 2

Figure 3 and figure 4 are the property listing page for property owners and Figure 5 is the property listing page for students. The property listed by students would first be verified by the admin and then would be posted on the website for other user to see where as the property listed by property owner would be directly seen on the website.

Figure 3
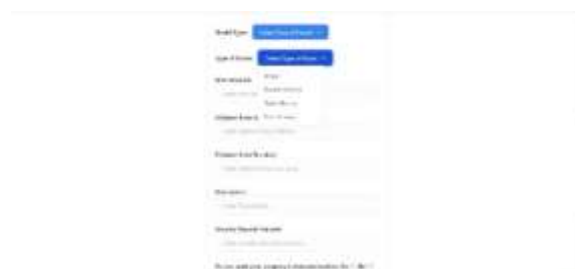
Figure 4

Figure 5

Figure 6, figure 7 and figure 8 are the search pages where the user can search for PGs, flats or hostel. Here the user can search various housing near their college. There are also various filters such as price-wise houses, location-wise houses and so on.
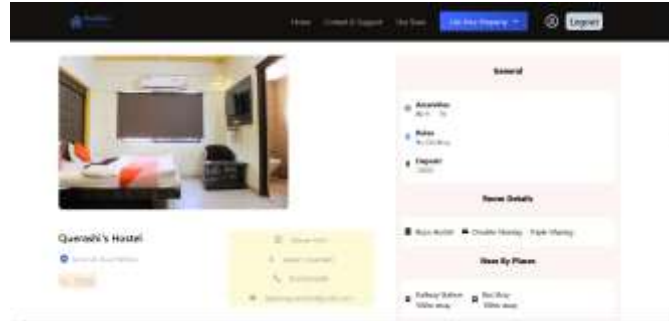

Figure 6
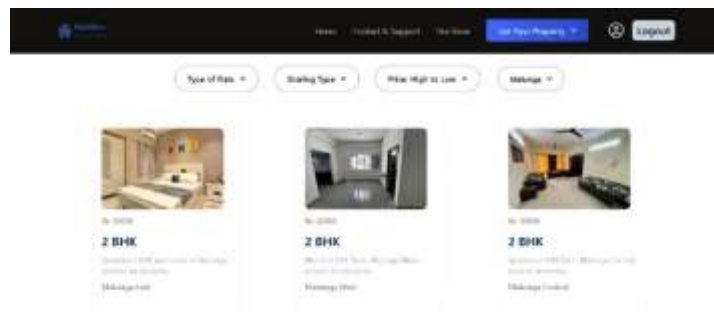
Figure 7
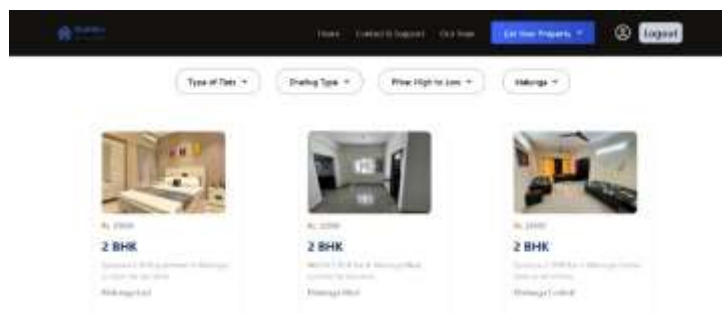
Figure 8

Figure 9 and figure 10 are the property pages. Here the user will find all the required details of a particular flat, hostel or pg. It will also show the location of the housing and can also add the property to their favorites page.

Figure 9

Figure 10

Figure 11 is the favorite property page where in the user list their favorite properties and can easily access them.

Figure 11

Figure 12 is the credits page where the user would be able see the credits earned by them. The credit can be given for every property listed by the student.

Figure 12

Figure 13, Figure 14, Figure 15 and Figure 16 are the admin pages. Here the admin would be able to verify the properties listed. The admin would also be able to see the number users and properties with a few graphical representations.
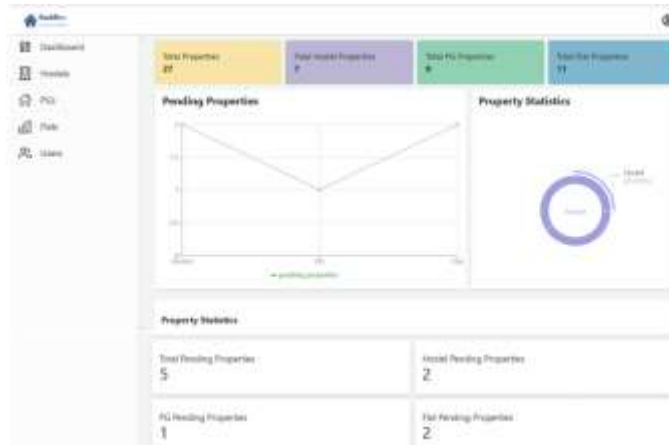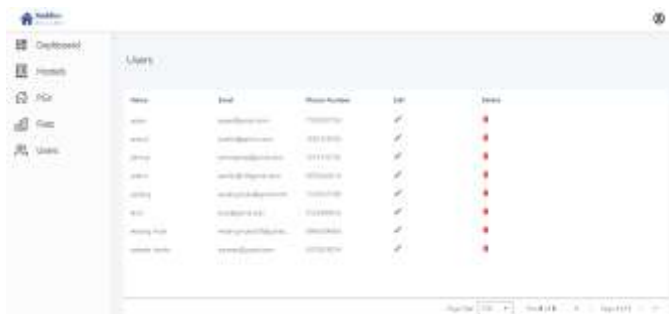
Figure 13

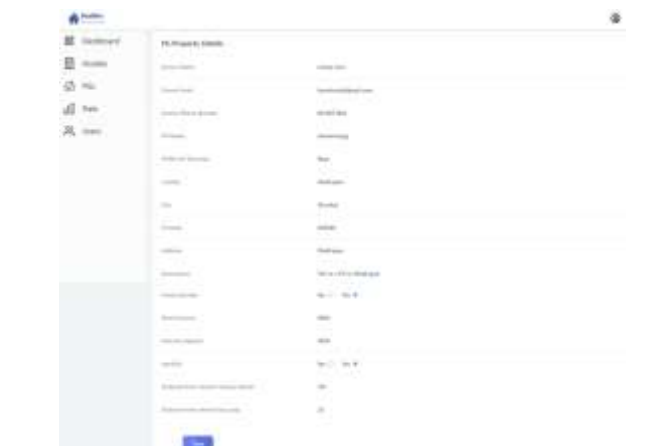**Figure 14**

Figure 15

Figure 16

7. CONCLUSION & FUTURE WORKS

In conclusion, the proposed house rental system emerges as a well-rounded and efficient online solution, specifically designed to meet the distinct needs of students navigating the rental market. By embracing technology, the platform facilitates seamless communication between property owners and students, streamlining the process of finding and managing rental accommodations. The time and cost savings inherent in the system make it an attractive option for property owners, while students benefit from a user-friendly interface that simplifies the search for suitable housing within their financial constraints and preferred locations. The system's commitment to aiding newcomers in exploring the city, coupled with features like sharing accommodation details among graduating students, adds a community-driven dimension to the platform. Overall, the proposed house rental system stands as a valuable tool, making the rental process accessible, efficient, and tailored to the unique needs of the student demographic.

We would like to increase our range from a particular college to various colleges and place from all over India and we would also like to include out station workers into the list as they also have problems in finding a new place in a new and unknown city.

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